Jobs Through Recycling 2004

FINAL GRANT REPORT

HOME RESOURCE

Final Report

Jobs Through Recycling and Pollution Prevention Grants

Awarded June 2004 to

Home Resource

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OVERVIEW

Background

In June of 2004, the EPA awarded a Jobs Through Recycling Grant to Home Resource (HR), a non-profit in Missoula, Montana with a mission to "reduce waste and help build healthy communities." This mission is accomplished by diverting re-usable building materials from the landfill and either distributing them to other non-profits or re-selling them at very affordable prices to benefit low-income households. The grant funded a collaboration with Opportunity Resources Inc. (ORI) in which adults with disabilities would be trained to clean, repair and refurbish materials that are donated to Home Resource in marginal condition. The benefits of the program include: a greater amount of materials being recycled, adults with disabilities gaining stimulating and meaningful jobs, and Home Resource customers having a wider selection of higher-quality materials at very low cost.

Funds were in place by October and the ORI crew began work at Home Resource November 1st, 2004. Two to four clients and one trainer worked half time through mid-July, 2005 to complete a contract for 2400 hours of labor. The original grant was to cover an eight month period, but an extra two weeks were required to make up shortfalls due to illness and absences. Because of the obvious benefits provided by the crew, Home Resource has continued to employ their services throughout the summer. Therefore, for the data analysis below we use the nine month period from November 2004 through July 2005.

Broadly speaking, the goal of the project was to improve the re-usability of materials at Home Resource. This goal has clearly been met, as demonstrated by the dramatic increase in the flow of materials through the HR warehouse. As our results will show, the crew was extremely productive de-nailing lumber, cleaning and displaying lights, labeling and sorting paint, and organizing all manner of hardware.

That said, not all aspects of the project went as expected. The original plan involved setting up a workspace, designating specific materials for refurbishing, including possibly replacing broken panels on cabinets, replacing broken glass in doors, or the like. This part of the plan proved to be unfeasible for two reasons. First, space that had been reserved at the ORI workspace was commandeered for another project, and second, no ORI clients proved to be up to the challenges of precise measurement and other complexities of finish carpentry. With this

lesson learned, the crew focused on cleaning, sorting and improving the display of materials in virtually all Home Resource departments.

One consequence of this shift was that we were not able to assign unique item numbers in the Home Resource Point of Sale (POS) system for items processed through the ORI facilities, as we originally proposed. (Our final work plan omitted this proposal as subsequent discussions with ORI indicated its impracticality.) It made no sense to label and track materials processed by ORI separately, since they processed such a large percentage of materials at HR in ways that helped them sell more quickly and thus avoid an untimely demise in a landfill.

On the other hand, these challenges gave rise to a new project which offers the potential to divert from the landfill a whole other class of material—scrap lumber shorter than six feet—and turn it into a highly desirable value-added product:

Cedar Saver™ Siding Shingles

While searching for appropriate work for ORI clients, Steve Loken, a nationally known leader in sustainable construction, suggested the idea of taking scrap lumber from new construction sites—lumber that is typically either thrown away or burned on site—and remilling it into siding shingles comparable to traditional cedar siding shingles. The ORI crew attempted the process and produced 1220 square feet, all of which sold quickly. The product has met with great enthusiasm and interest from the community, and generated several articles in local papers and magazines (Appendix B.) A 2005 EPA Source Reduction Assistance grant is now supporting the scale-up of Cedar Saver production. We are addressing issues associated with the collection of source material and market development, and hope to introduce the concept in larger Northwestern cities in 2006.

The following report first reviews the project goals and objectives as presented in the work plan, and then evaluates our achievement of each. Two measurements—tons of materials processed and the percentage increase in materials diverted by Home Resource—indicate that the program had a highly beneficial impact on Home Resource's waste diversion efforts.

PROJECT GOALS AND OBJECTIVES

Home Resource's final work plan included the following:

What will be achieved?

- Materials processing facilities will be set up at Opportunity Resources and Home Resource, including tools and supplies necessary to clean and repair a wide variety of building materials.
- A trainer (skilled carpenter or tradesperson) will be employed for 20 hours per week for eight months to teach necessary skills to ORI clients.
- At least three ORI clients will be trained and employed at .5 FTE to process materials dropped off at the ORI workspace and transport them to the Home Resource warehouse. Employees may also clean and repair materials at the H.R. yard.
- The workspace will process at least 100 tons of building materials in the first eight months.

Expected Outputs and Measurements:

1) Within the scope of 1.5 FTE for eight months, fifteen to twenty ORI clients will receive training to improve employability in maintenance, janitorial, warehousing and basic woodworking jobs. Clients may be employed anywhere from a few weeks to all eight months, depending on aptitude and compatibility with the job requirements.

Measurement: The trainer will evaluate the clients on a daily behavior sheet and monthly behavior sheet, basis according to Individualized Planning Processes (IPPs) utilized by ORI. With such IPPs, work goals are set up by a vocational team and the crew supervisor critiques each client's work on a daily basis, and the vocational team reviews progress monthly and quarterly.

1) Trainer and clients will process 100 tons of building materials.

Measurement: All materials processed will be counted, categorized, weighed with an industrial scale, and recorded on a daily basis as they are moved onto the Home Resource sales floor. Reports will note improvements to the materials, such as parts replaced, resurfacing, etc. Data logs will be continually updated and maintained by the Home Resource Directors for reporting purposes at the end of the project.

Our original proposal included a more ambitious goal of increasing Home Resource's overall waste diversion by 20%. Although in the final work plan we determined it would be impractical

to track diversion such that ORI's contribution would be isolated, a consideration of this goal in the following evaluation will prove to be valuable.

Method for estimating waste diversion: The analysis below relies heavily on a method for estimating waste diversion developed by Jeff Mascornick, a graduate student and HR intern in spring of 2004. First, Mascornick took a random sample of goods from each department, weighed them and noted their prices. Then he found an average weight and an average price for each department. The average weight divided by the average price gives an average "pounds per dollar" figure, which is then multiplied by departmental sales figure to estimate the total pounds diverted for each department, and the departmental figures are then totaled. The results are represented in the charts and figures below. (Datasheets and tabulations are available upon request.)

EVALUATION

Job Training and Organizational Goals: The first three goals bulleted above deal with job training and work organization and are relatively simple to evaluate.

Workspace provisions: As already mentioned, ORI was not able to set up a workspace as planned, although workspace was created at Home Resource primarily for denailing, cleaning, and minor repair work. Eventually, in January 2005, ORI set up a workspace at their wood products facility to experiment with production of Cedar Saver shingles. Materials diverted through this program are tracked separately and are included in the list of materials processed in Appendix A.

Hiring of trainer: ORI hired a trainer/supervisor who has proven to be extremely valuable and capable of achieving high levels of productivity out of the disabled clients.

Employment and training: Throughout the grant period a total of 15 clients received training and/or employment. Of those 15, four were long term permanent positions, and the remaining 11 were work assessment positions. ORI's clients in the work assessment program attempted 63 work goals and met 48 of those work goals for a 76% completion rate. Specifics of Individualized Planning Processes and progress reports are available upon request.

Waste Diversion Goals:

Materials Processed: The ORI crew maintained a careful log of all materials processed throughout the 8 ½ month period. The condensed results (Appendix A) show that ORI processed a total of 92.9 tons of material. The largest category of material was lumber at 21.38 tons, followed by flooring at about 12.5 tons, roofing at 11.5 tons and latex paint at 10.78 tons. Other categories ranged from lighting at .8 tons to plumbing fixtures at 7.29 tons, and included sheet goods, doors, windows, cabinetry, hardware, scrap lumber for Cedar Saver shingles (as a separate category from lumber for resale) and materials processed at Home Resource for recycling at local metal, glass and porcelain recycling facilities. (This last category is included because the items required processing that Home Resource offers as a service, without which the items would have gone to the landfill.) Notably, the total is about 7 tons short of our goal. Precisely half way through the period, the crew had processed 49.6 tons, and the crew leader asserts that they could have met our goal of 100 tons, but the Cedar Saver project required considerably more time and handling per pound of material.

This fact led us to consider an important question: Is it better to focus energy on the material that produces the fastest results in the short term, or develop new methods and products that could have an even bigger impact over the long term? To take an extreme example, an ORI client might clean and display a cast iron bath tub, adding 300 pounds to the tally in fifteen minutes, but that tub could also be recycled or sold for lower value without cleaning. Conversely, the ORI client could spend that fifteen minutes, cleaning, denailing and resawing a 2x6 into ten siding shingles, using material that certainly would have gone to waste, and producing a product of higher value (thus adding economic benefits to the program,) yet the pounds diverted might only be five or six.

Another aspect of this question became apparent: is it better to pursue high yield in materials or seek projects that provide consistent, constructive employment for adults with disabilities? The crew was in fact so efficient at improving the warehouse that we developed the Cedar Saver project partly to provide consistent, manageable work. In the end, Home Resource sacrificed 7 tons of immediate processing to innovation and a long-term vision of greater resource efficiency.

Waste Diversion Increase: Home Resource waste diversion increased by almost 57% for the nine month period beginning November 2004 and ending July 2005 as compared with the previous year (Table 1.) Such a high growth rate may be the natural result of Home Resource's youth, this being only our second year of operation, but there is evidence to suggest much of the growth is attributable to the work of the ORI crew. Simply observing the various departments before and after ORI work, staff and customers commented that the materials are better organized, more accessible to customers, cleaner and more appealing.

Table 1: TONS DIVERTED

Grant period compared with prior year

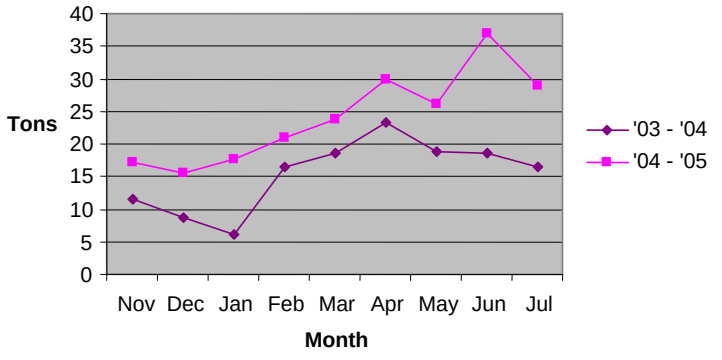
	2003 - 2004	2004 – 2005	% increase
Nov	11.5	17.17	49.30%
Dec	8.6	15.6	81.40%
Jan	6.19	17.56	183.62%
Feb	16.41	20.85	27.07%
Mar	18.54	23.69	27.78%
Apr	23.34	29.85	27.89%
May	18.83	26.12	38.76%
Jun	18.51	36.92	99.42%
Jul	16.45	29.05	76.59%
TOTALS:	**138.37**	**216.82**	**56.69%**

Precise quantification of ORI's contribution to HR's overall waste diversion increase is difficult without the ability to distinguish ORI-processed materials in the point of sale system. However, if we compare waste diversion of various departments before and after ORI processing, the impact is obvious. Two examples best make the point: sales of asphalt shingles and lighting.

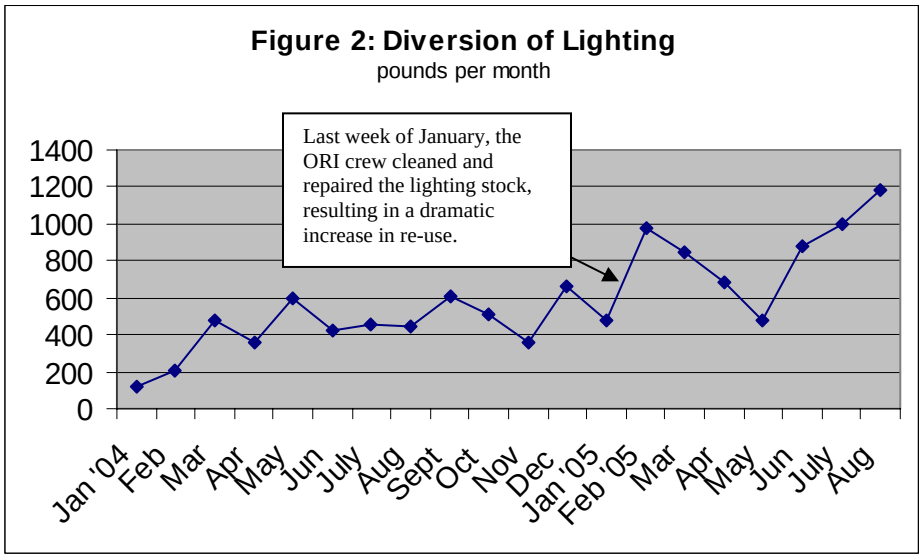
Asphalt Shingles: Dozens of pallets of surplus roofing shingles were donated in mid October, 2004. In the last two weeks of November, the ORI crew sorted, counted and displayed them such that customers could easily find what they needed. Here we can contrast two equal time periods of three weeks before and after organization by ORI. In the three weeks prior to organization, 1,980 pounds of shingles left Home Resource for re-use, but in the three weeks after ORI processing, 6,508 pounds were re-used—an increase of 228 per cent! Moreover, this increase occurred as winter weather was setting in—a factor that normally slows the movement of materials to re-use.

Figure 1: Tons of Waste Diverted

Month to Month Comparison, November - July



Lighting:

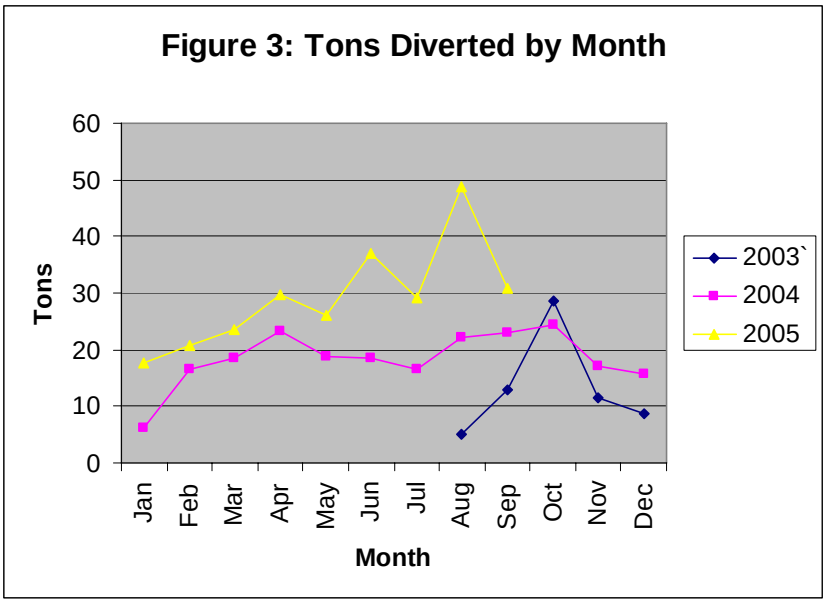


Lighting fixtures are one of the most commonly donated items at Home Resource, and they usually require extensive cleaning and assembly for re-usability. The entire stock had become a jumble of wiring, globes, pieces and parts by the end of January 2004. After the ORI crew cleaned, displayed and in some cases rewired or reassembled the entire stock in the last week of January, an undeniable jump in waste diversion occurred (Figure 2.)

As the line in figure two shows, re-use of lighting had not improved much, on average, since spring of 2004, but after ORI's work, diversion jumped from 473 tons in January to 974 tons in February. This increase of 206% contrasts sharply with a 12% overall increase in diversion in those two months, from 17.86 tons in January to 20.05 in February (see Figure 1). Also, the general trend in overall diversion throughout this period is a gradual upward movement as compared with the drastic swings in lighting. The drop in lighting diversion in the spring of 2005 may also be attributable to 1) clearance of most desirable stock, 2) inability of HR staff to maintain organization created by ORI, and/or 3) changes in ambient light in our northern latitude. (Less darkness reduces demand for lighting!) It is notable that ORI worked in the lighting area again in May, and has made more regular efforts to maintain the area since then. Figure 2 shows a consistent gain in lighting diversion through the end of the evaluation period.

Numerous other examples might be given based on departmental data, but the trend should be clear already. Not all departmental data reveals such dramatic results; however, these distinguishable examples and the HR staff affirm that overall waste diversion would have been much less without the Jobs Through Recycling program.

CONCLUSION



Home Resource's Jobs Through Recycling grant resulted in fifteen adults with disabilities receiving training and 92.9 tons of material processed, contributing to an increase in total waste diversion of 56.69% over the same period of the previous year. Home Resource found the program to be valuable enough to continue beyond the grant period, and waste diversion statistics continue to increase (figure 3), owing in large part, Home Resource managers believe, to the work of the ORI crew. In August, 2005, waste diversion by Home Resource hit an all time high of 48.9 tons, a figure largely attributable to the many tons processed in the grant period by ORI. Without the services provided by ORI, materials donated to Home Resource would have moved out much less quickly, resulting in an overcrowded warehouse and yard and an inability to accept further donations.

Moreover, Home Resource learned important lessons about how to employ adults with disabilities to their greatest potential, and the grant instigated the development of Cedar Saver siding shingles, a value-added product utilizing a previously untapped waste stream. Home Resource is continuing the development of this product and expanding its efforts in all aspects of construction and demolition waste re-use, thanks to the rapid growth experienced over the past year—growth that was clearly facilitated by the Jobs Through Recycling program.

Appendix B

Press Items on EPA funded projects